UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,694	01/27/2004	Sherwin V. Kevy	1459.008A	1436

23405 7590 04/26/2011

HESLIN ROTHENBERG FARLEY & MESITI PC
5 COLUMBIA CIRCLE
ALBANY, NY 12203

EXAMINER	
SCHUBERG, LAURA J	
ART UNIT	PAPER NUMBER
1657	
MAIL DATE	DELIVERY MODE
04/26/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/765,694
Filing Date: January 27, 2004
Appellant(s): KEVY ET AL.

Robert J. Mandle
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 01/25/2011 appealing from the Office action mailed 04/26/2010.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1-18, 21 and 22 are rejected and pending. Claims 19-20 have been canceled.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

Appellant has incorrectly listed claim 20 as withdrawn when it should be listed as canceled. Claims 19 and 20 were canceled in the amendment filed 10/15/2009.

(8) Evidence Relied Upon

4,680,177	Gray et al.	7-1987
5,773,033	Cochrum et al.	6-1998
6,472,162	Coelho et al.	10-2002
4,359,463	Rock	11-1982
4,812,310	Sato et al.	03-1989
5,135,875	Meucci et al.	8-1992

Xiao et al., "On the accurate measurement of serotonin in whole blood", Scan J Clin Lab Invest, 1998, volume 58, pages 505-510.

Demopoulos et al., "A simple and precise method for the routine determination of platelet-activating factor in blood and urine", Lipids, 1994, volume 29. no.4, pages 305-309.

Weissbach et al. "A simplified method for measuring serotonin in tissues: simultaneous assay of both serotonin and histamine", Journal of Biological Chemsitry, 1958, volume 230 (2), pages 865-871.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2, 3, 7-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Gray et al. (US 4,680,177) in view of Cochrum et al. (US 5,773,033).

Gray et al. teach a method for the production of blood products wherein anticoagulated whole blood or blood plasma is processed by cryoprecipitation to yield a precipitate that is separated from the supernatant (column 4 lines 39-49). While blood plasma is indicated as preferred over whole blood (column 4 lines 9-21), whole blood is clearly indicated as an option (column 4 line 39 and column 8 lines 45-58). Anticoagulation with neutral salts is indicated as preferred when coagulant activity in the precipitate is desired (column 4 lines 39-50), the use of anticoagulants such as CPD,

ACD or EDTA are indicated as less preferred options since they leave more coagulant activity in the remaining supernatant (column 4 line 1-57), and are used for comparisons (column 8 lines 45-58). Blood is taken from a mammalian donor (homologous) (column 3 lines 55-60). Calcium chloride is taught as a possible option as an anticoagulant (column 6 lines 37-40). The coagulant produced is intended for administration to a patient for the induction of clotting (column 1 lines 19-24) and is therefore inherently combined with the blood (as well as the blood derivatives) of the patient to obtain a clot.

Gray et al. do not teach the mixing of the anticoagulated whole blood with a precipitating agent, wherein the volume of anticoagulated whole blood is between 8 to 10 ml, or wherein the coagulant is autologous.

Cochrum et al. teach that suitable methods of precipitation of blood in order to obtain an adhesive agent include cryoprecipitation or precipitation by using ethanol (column 2 lines 15-25). Cochrum et al. also teach that it is preferable when producing blood products to use the patient's own blood in order to eliminate or reduce the risk of disease transmission or immunoreactions caused by introduction of foreign proteins (column 2 lines 41-55).

Therefore, one of ordinary skill in the art would have been motivated to substitute different methods of precipitation (such as ethanol precipitation) for cryoprecipitation in the method of Gray et al. with a reasonable expectation of success because Cochrum et al. teaches that these are art recognized equivalents for forming precipitates from blood for the purpose of obtaining adhesive agents. Since Cochrum et al do not require a specific temperature for the precipitation methods of the adhesive agent, one of

ordinary skill in the art would have been motivated to use room temperature as this would have simplified the methods by not requiring steps for heating or cooling.

The amount of whole blood and ethanol used and the length of time for incubation would have been a matter of routine optimization depending on the final amount of coagulant or blood component needed. One of ordinary skill in the art would have been motivated to use the smallest amount of blood possible when drawing from the same patient to minimize blood loss during surgery. One of ordinary skill in the art would have used the shortest incubation time in order to supply the coagulant or blood component to the patient as quickly as possible.

One of ordinary skill in the art would have been motivated to use autologous blood in the method of Gray et al. with a reasonable expectation of success because Cochrum et al. teaches that autologous blood is preferable to reduce disease transmission (column 2 lines 50-55).

As far as the new limitations regarding the purity of the final thrombin product, these claim limitations are descriptions of the final product achieved using the obvious method steps of the claimed invention and are therefore deemed to be the inherent result of following those steps that have been deemed to be obvious. If this is not the case, it would be appear that the claimed invention must be missing essential method steps to ensure such a final product. In addition, the purification and optimization of the final product of thrombin to remove or reduce inhibiting proteins would have been an obvious modification as well.

Therefore, the combined teachings of Gray et al. and Cochrum et al. render obvious Appellants' invention as claimed.

Claims 1-4, 7-18 and 21-22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Coelho et al. (US 6,472,162) in view of Rock (US 4,359,463).

Coelho et al. teach a method for extracting and then dispensing thrombin consisting of taking whole blood from a person, sequestering prothrombin from the whole blood by addition of ethanol (mixing, incubating, and collecting), wherein ethanol is present at a concentration between 8% and about 20% and converting prothrombin to thrombin (column 12 claim 17). Filtering is used to separate the precipitate from the supernatant and calcium chloride is added with the ethanol (column 10 lines 7-49). However, both filtering and centrifugation are taught as suitable methods for separating precipitate from supernatant (column 9 lines 13-17). Wherein the coagulant prepared is autologous is specifically taught (column 6 line 46) as well as sourced from a single donor (homologous) (column 6 line 11). Coelho et al also teach wherein the coagulant is combined with the clotting and adhesive proteins (blood derivatives) harvested and concentrated from the same unit of blood to form a biological sealant (column 5 lines 60-65). While Coelho et al. are silent with regard to the amount of whole blood required; the apparatus used for the method is capable of receiving a volume of 15 ml (column 9 line 42). The incubation time is taught at about 60 minutes or 30 to 75 (column 10 lines 27 and 42). Coelho et al are also silent as to what temperature is used in the

embodiments wherein the whole blood is precipitated, but one of ordinary skill in the art would have been motivated with a reasonable expectation of success to use room temperature since this is the temperature that is used in the other embodiments utilizing precipitation agents (column 11 lines 5-39). Wherein the method consists of only precipitating whole blood with ethanol in a manner sufficient to produce an adhesive agent and separating the agent from the rest of the composition is included as well (column 6 lines 28-34 and column 12 claim 17).

Rock teaches a method of treating whole blood to obtain Factor VIII and that whole blood that is withdrawn from a patient is generally collected with an anticoagulant (column 1 lines 14-17). Commonly used anticoagulants include ACD, CPD and EDTA (column 2 line 63 – column 3 line 6).

While the addition of an anticoagulant is considered to be inherent to the method of Coelho et al. as described in the previous office action, even if it had not been inherent, it would have been obvious for one of ordinary skill in the art to add the anticoagulant to the whole blood in the method of Coelho et al. The artisan of ordinary skill would have been motivated with a reasonable expectation of success by the fact that it was common practice to add anticoagulants to blood collected for the purpose of obtaining blood products as taught by Rock.

Coelho et al. does not teach the amount of whole blood to be used, higher concentration levels of ethanol, or incubation times of less than 30 minutes. However these variables would have been a matter of routine optimization depending on the final amount of coagulant needed. One of ordinary skill in the art would have been motivated

to use the smallest amount of blood possible when drawing from the same patient to minimize blood loss during surgery. One of ordinary skill in the art would have used the shortest incubation time in order to supply the coagulant or blood component to the patient as quickly as possible. One of ordinary skill in the art would have optimized the concentration of the ethanol to obtain a product of the highest amount with the highest purity in the shortest amount of time possible. One of ordinary skill in the art would have been motivated to use both centrifugation and filtering to separate the precipitate from the supernatant in order to improve the quality and purity of the final product. One of ordinary skill in the art would have had a reasonable expectation of success because Coelho et al. do suggest that modifications and adaptations of the method may be applied to the method as needed (column 11 lines 34-39).

As far as the new limitations regarding the purity of the final thrombin product, these claim limitations are descriptions of the final product achieved using the obvious method steps of the claimed invention and are therefore deemed to be the inherent result of following those steps that have been deemed to be obvious. If this is not the case, it would be appear that the claimed invention must be missing essential method steps to ensure such a final product. In addition, the purification and optimization of the final product of thrombin to remove or reduce inhibiting proteins would have been an obvious modification as well.

Therefore, the combined teachings of Coelho et al. and Rock render obvious Appellants' invention as claimed.

Claims 5 and 6 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Coelho et al. (US 6,472,162) in view of Rock (US 4,359,463) as applied to claims 1-4, 7-18 and 21-22 above, and further in view of Sato et al (US 4,812,310).

The combination of Coelho et al. and Rock teach the invention of claims 1-4, 7-18 and 21-22 as described above, but do not specifically mention that mannitol is to be used in combination with ACD.

Sato et al. teaches that by adding mannitol to blood, the swelling of blood cells can be prevented during the preservation (column 4 lines 32-34). Sato et al. teach that it has been found that by adding mannitol to a conventional preserving solution such as ACD that the concentration depends on the amount of blood to be preserved, the decrease in Na+ concentration and the increase in K+ concentration in the plasma for the hemolysis to be prevented (column 4 lines 40-50). Sato et al. teach that mannitol was usually added in an amount of 0.67 to 6.7 w/v% (column 5 line 66).

One of ordinary skill in the art would have been motivated to add mannitol to the ACD anticoagulant in the method of Coelho et al because Sato et al. teaches that by adding mannitol to blood, the swelling of blood cells can be prevented during the preservation (column 4 lines 32-34). One of ordinary skill in the art would have had a reasonable expectation of success because Coelho et al. do suggest that modifications and adaptations of the method may be applied as needed (column 11 lines 34-39) and

Sato et al. teach that this modification is applicable to the preservation of a blood preparation, particularly whole blood (column 6 lines 30-35).

The concentration of mannitol used with ACD in the method of Coelho et al. would have been a matter of routine optimization. One of ordinary skill in the art would have been motivated to adjust the level of mannitol since Sato et al. teach that the concentration depends on the amount of blood to be preserved, the decrease in Na+ concentration and the increase in K+ concentration in the plasma (column 4 lines 40-50). One of ordinary skill in the art would have had a reasonable expectation of success because Sato et al. teach a range of concentrations for optimization (column 5 line 66).

Therefore, the combined teachings of Coelho et al., Rock and Sato et al. render obvious Appellants' invention as claimed.

(10) Response to Argument

A. Obviousness rejection over Gray in View of Cochrum

Appellant argues that the Gray patent fails to teach or suggest four elements of Appellant's claimed method: 1) anticoagulation of whole blood with conventional Ca-binding anticoagulants; 2) precipitation of whole blood; 3) precipitation with ethanol; and 4) recovering the supernatant wherein the supernatant contains a thrombin preparation with the claimed properties. Appellant argues that Cochrum fails to teach or suggest

elements 2-4 as well. Appellant asserts that the combination of Gray in view of Cochrum fails to result in the claimed invention.

This is not found persuasive because the combination of Gray in view of Cochrum does in fact suggest all the elements of Appellants' claimed invention either explicitly or inherently. In response to Appellants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Gray et al teach that the use of conventional Ca-binding anticoagulants is a less preferred option (column 4 lines 1-57) and use them for comparisons (column 8 lines 45-58). While Gray et al do not recommend these anticoagulants, they are clearly represented as a workable, if less preferred, option for the anticoagulation of whole blood. In any event, claim 1 does not require the use of a specific anticoagulant.

Gary et al do in fact teach precipitation of anticoagulated whole blood to yield a precipitate that is separated from a supernatant (column 4 lines 39-49). While Gray et al do not specifically teach the use of ethanol for precipitation, Cochrum et al teach that ethanol precipitation is an alternative to cryoprecipitation for the separating of fibrinogen precipitate from blood (column 2 lines 20-25) and thus an obvious alternative.

As for the step of recovering the supernatant, while Gray is intending to use the precipitate that is separated from the supernatant, this separating process inherently requires that the supernatant be recovered as well (if for no other reason than to

dispose of it). While it is Gray's intention to use the precipitate produced rather than the supernatant, this does not negate the fact that Gray does in fact teach a method that produces a supernatant containing thrombin.

Appellant asserts that consistent with what is known in the art, cryoprecipitation is performed on plasma, not whole blood.

This is not found persuasive because Gray et al specifically teach the cryoprecipitation of anticoagulated whole blood or blood plasma (column 4 lines 39-40).

Appellant argues that Gray does not teach a method for the production of thrombin directly from anticoagulated whole blood as claimed by Appellant. Appellant asserts that because Gray does not perform cryoprecipitation on whole blood in their examples that they do not teach cryoprecipitation of whole blood. Appellant asserts that cryoprecipitation is only performed on plasma.

This is not found persuasive because the method of Gray does in fact teach the production of a thrombin supernatant precipitated directly from anticoagulated whole blood (see column 4 lines 39-49). The thrombin is inherently present in the supernatant after Gray precipitates the anticoagulated whole blood. It is not required that Gray exemplifies every embodiment that they teach.

Appellant asserts that there is no apparent reason that one can glean from Gray for substituting a chemical method of precipitation for cryoprecipitation, particularly where the starting material is whole blood.

This is not found persuasive because the teaching of Cochrum demonstrates that when precipitation of fibrinogen from a blood sample is sought that ethanol precipitation is an alternative to cryoprecipitation.

Appellant argues that Cochrum does not teach the claimed invention and does not remedy the deficiencies of Gray. Appellant asserts that the combination of Gray and Cochrum do not render the instant claims as obvious as the combination fails to support any of the rationales listed in MPEP 2143.

This is not found persuasive because Cochrum teaches that ethanol precipitation is equivalent to cryoprecipitation for the sequestering of adhesive agents from blood products. Appellant is directed to pages 12-13 of *KSR v Teleflex* (500 US 398 2007) " … the Court has held that a "patent for a combination which only unites old elements with no change in their respective functions . . . obviously withdraws what is already known into the field of its monopoly and diminishes the resources available to skillful men." Great Atlantic & Pacific Tea Co. v. Supermarket Equipment Corp., 340 U. S. 147, 152 (1950). This is a principal reason for declining to allow patents for what is obvious. The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." "When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, §103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the

technique is obvious unless its actual application is beyond his or her skill." Clearly in the instant case the substitution of ethanol precipitation for cryoprecipitation for the sequestering of desired adhesive agents from a blood product would have been obvious at the time the invention was made.

In addition, Appellant also suggests in their disclosure that cryoprecipitation and chemical precipitation are variants known in the art for the isolation of cellular components and proteins of blood (page 3 paragraph 9). The MPEP states that "an applicant's expressed recognition of an art-recognized or obvious equivalent may be used to refute an argument that such equivalency does not exist" and "an express suggestion to substitute one equivalent component or process for another is not necessary to render such substitution obvious" (see MPEP 2144.06).

Appellant argues that a person of skill in the art would not have recognized that the results of the combination of Gray and Cochrum were predictable. Appellant asserts that there would be no reasonable expectation of success to arrive at the present invention by combining the teachings of Gray and Cochrum.

This is not found persuasive because both Gray and Cochrum are drawn to the same field of endeavor, the sequestering of fibrinogen from a blood sample. It is not necessary for absolute predictability to be present for a modification to have a reasonable expectaction of success. Based on Cochrum's teaching that both cryoprecipitation and ethanol precipitation are known to be suitable for the purpose of obtaining fibrinogen from a blood sample, one of ordinary skill in the art would have had a reasonable expectation of making the substitution successfully in the method taught

by Gray who was also attempting to isolate the same protein fraction from a blood sample.

Appellant argues that the skilled artisan would have been taught away from using whole blood to practice the presently claimed invention because use of whole blood would be associated with unwanted cell debris and cellular proteins. Appellant cites the declarations of Dr Sherwin Kevy and Dr Mandle as evidence to support this argument.

This is not found persuasive because there are numerous teachings in the prior art that suggest that whole blood can in fact be successfully precipitated by either cryoprecipitation or ethanol precipitation. Numerous references providing evidence to support this has been previously cited in prior office actions and include Gray (column 4 lines 39-49) and Coelho (column 12 claim 17, column 14 claim 55, column 16 claim 97, column 17 claims 99 and 103, column 18 claim 107, column 19 claim 112).

Appellant argues that while there are many methods for fractionating blood and that they are not interchangeable. Appellant asserts that one cannot extrapolate a method for one protein to another unrelated protein.

This is not found persuasive because in the case of Gray and Cochrum these references are both attempting to obtain the same protein, fibrinogen, from a blood sample and therefore Cochrum's teaching that ethanol precipitation can be used as well as cryoprecipitation for the sequestering of this particular protein is one that can be extrapolated.

In response to Appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that

any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In the case of the obviousness rejections cited above only knowledge taken from the references is used to make the judgment of obviousness.

B. Obviousness rejection over Coelho in view of Rock

Appellant argues that the combination of Coehlo and Rock does not result in the claimed invention. Appellant asserts that the claims of Coelho require the sequestering of plasma from whole blood.

This is not found persuasive because while some of the Coelho claims include a step for sequestering plasma, many of them don't. Specifically claims 17, 55, 97, 99, 107 and 112 require the precipitation of whole blood directly with ethanol. Not only is a step for sequestering plasma from whole blood not included in these claims, but it is excluded by the transitional phrase "consisting of" which precludes any additional steps in many of these claims. Clearly Coelho teach the ethanol precipitation of whole blood to obtain a supernatant containing thrombin.

Appellant argues that Coelho and Rock fail to suggest the step of recovering thrombin with the properties as claimed by Appellant. Appellant asserts that the combination of Coelho and Rock fail to result in the claimed invention.

This is not found persuasive because the skilled artisan carrying out the same method steps as claimed by Appellant should collect the same product at its conclusion. It is not necessary for the prior art to recognize and list the properties of the final product, only that there be some motivation to carry out the clamed method steps that will inherently produce the final product. If the method steps as claimed are insufficient to ensure the production of the claimed properties of final product, then there would appear to be essential method steps and essential elements missing from Appellant's claim.

Appellant argues that the Coelho claims do not state what ethanol is actually added to. Appellant asserts that the Coelho claims do not explicitly state adding ethanol to whole blood. Appellant asserts that Coelho fails to provide any evidence that precipitation of whole blood was either desirable or advantageous for the preparation of thrombin. Appellant asserts that Coelho teaches away from the claimed invention.

This is not found persuasive for two reasons. First, because the claims use the transitional phrase "consisting of", which does not allow for additional steps such as sequestering of plasma, the skilled artisan can reasonably conclude that the claims require the ethanol to be added to the whole blood of the only previous step. Second, the Coelho specification specifically states that the blood product used is preferred to be plasma (column 9 lines 13-15) which requires that other blood products, while less preferred, are also acceptable. The establishment of a preferred blood product necessarily establishes that another blood product is a less preferred alternative. The only other blood product that could conceivably produce thrombin in a usable amount

would be whole blood. Therefore support for the use of whole blood as an alternative to plasma is implicitly found in the Coelho specification.

Appellant argues that Coelho does not recite a step for removing the inevitable precipitate of cell debris and cellular protein that result from mixing ethanol with whole blood or reasons why one would omit this step.

This is not found persuasive because Coelho does include the sequestering of thrombin from a precipitated whole blood sample which implies that any method of isolating the desired protein from the whole blood is acceptable. It is not required that a patent include information that is well known to the artisan of ordinary skill and the isolating of a supernatant from a precipitated sample is considered to be well known in the art.

Appellant argues that the Coelho patent does not provide ample guidance for the use of whole blood as a starting material. Appellant argues that at the time of the Appellant's invention, isolation of plasma from whole blood prior to further processing was standard in the art for preparing fibrin sealants from blood. Appellant cites the declarations of Dr Kevy and Dr Mandle and the Kumar reference to support this assertion.

This is not found persuasive because the claimed invention of Coelho et al has in fact been patented (US 6,472,162), and thus the Office has determined that the method of Coelho et al is in fact enabled with respect to whole blood. In addition the fractionation of whole blood by precipitating proteins is known in the prior art as demonstrated by the teachings of Xiao et al and Gray et al (both cited in previous and

current rejections) as well as by Demopoulos et al (page 305, column 2, lines 13-17), Weissbach et al (page 808, 2nd paragraph) and Meucci et al (US 5,135,875 column 6 lines 29-32). Clearly the fractionation of whole blood by precipitation is an alternative known in the prior art and thus the Coelho et al embodiment utilizing whole blood does not require additional teachings beyond what is provided in the specification of Coelho et al and the prior art to be considered enabled. While Appellants' claimed method may not be the standard method in the art, the prior art references cited in the 35 USC 103 rejections above clearly demonstrate that the claimed method is not nonobvious.

Appellant argues that Rock et al do not relate to the precipitation of either whole blood or plasma for the recovery of a coagulant material like thrombin. Appellant asserts that Rock et al do not compensate for the deficiencies in the teachings of Coelho et al.

This is not found persuasive because the teaching of Rock et al was cited in the obviousness rejection to demonstrate that the specific anticoagulants claimed by Appellant are well known in the art and that their presence in the method of Coelho et al would have been obvious if not inherent. In response to Appellant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Appellant argues that the present invention is directed to a method for the production of thrombin (a coagulant) and that the conventional Ca++ chelating

anticoagulants are used in the present invention, but not relevant to the method's novelty, as suggested by the prior Office Action.

This is not found persuasive because the prior Office action never suggested that the claimed anticoagulants were unusual in any way. The Rock reference was cited in the obviousness rejection to address those claim limitations missing from the Coelho patent which were the conventional anticoagulants used by Appellant to produce their thrombin product.

C. Obviousness and Inherency

Appellant argues that the principal of inherency has no place in the determination of obviousness under 35 USC Section 103. Appellant asserts that the claimed properties of the final product which require an autologous thrombin that contains 80-90% of prothrombin-thrombin proteins, no detectable fibrinogen and 20-30% of baseline levels of anti-thrombin III (ATM) are not inherently produced by carrying out the claimed method steps. Appellant asserts that “the properties of the final product is not simply an inherent property of practicing the method” (page 30 of 44).

This is not found persuasive because a method claim is required to include all steps and elements that are deemed to be essential for the practicing of the method. If it is possible for one of skill in the art to carry out the claimed method steps and not arrive at the claimed result, then there **must** be elements and steps missing from the claimed method. It would appear that Appellant is suggesting that a purification step to further isolate the thrombin would be required to achieve Appellant’s claimed end result.

However, even if this is the case, such an additional purification step would be considered obvious as the purification of a product is well known as desirable in the prior art.

In view of the foregoing, when all of the evidence is fully considered, the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Laura Schuberg/
Examiner
Art Unit 1657

Conferees:

/Michael G. Wityshyn/
Supervisory Patent Examiner, Art Unit 1651

/Terry A McKelvey/

Supervisory Patent Examiner, Art Unit 1655